TITLE 14, CALIFORNIA CODE OF REGULATIONS
SUBDIVISION 4. OFFICE OF SPILL PREVENTION AND RESPONSE
CHAPTER 4. VESSEL REQUIREMENTS
SUBCHAPTER 1. TANK VESSEL ESCORT REGULATIONS
FOR THE SAN FRANCISCO BAY REGION
SECTIONS 851.1 through 851.10.1
Amended July 18, 2001
Effective October 4, 2001

"851.1 Effective Date of this Subchapter"

This subchapter, as amended, shall be effective on October 4, 2001.

Note: Authority: Sections 8670.17.2(a), and 8670.23.1(d), Government Code.
Reference: Sections 8670.17.2(b), 8670.23.1 (d), (e)(1) and (h) Government Code.

"851.2 Purpose and Scope"

This subchapter sets forth tank vessel escort requirements for the San Francisco, San Pablo and Suisun Bays. These requirements specify that tank vessels carrying 5,000 or more long tons of oil in bulk as cargo shall be escorted by a suitable escort tug or tugs. The escort tugs will be available, and shall respond as needed to influence the speed and direction of travel of the tank vessel in the event of a casualty, or steering or propulsion failure, thereby reducing the possibility of groundings or collisions and the risk of oil spills from these tank vessels. This subchapter establishes the criteria for matching tugs to tankers and barges. Tankers will be matched according to a matrix that correlates a tanker's displacement with the braking force of a tug(s). Barges must be matched based on a one-to-one correlation of the deadweight tonnage of the barge to the braking force of the tug(s).

The Administrator shall review the matching criteria and other program elements within two years of the effective date of this subchapter. The program review will include a survey of the tanker-related incidents in U.S. waters to determine the types of failures that have occurred, an assessment of tug technology and any advances made in design and power, and the tug escort-related rules and policies that are implemented by other coastal states and maritime organizations. At the conclusion of the review, the Administrator will determine whether it is necessary to modify the tug/tanker matching criteria or any other provision of the program requirements.

Note: Authority: Sections 8670.17.2(a) & 8670.23.1(d), Government Code.
Reference: Sections 8670.17.2(b) and 8670.23.1(e)(1), Government Code.

"851.3 Definitions"

Definitions governing the construction of this subchapter can be found in Government Code Section 8670.3, and Chapter 1 of this subdivision.

Note: Authority: Sections 8670.3, 8670.17.2(a) and 8670.23.1(d), Government Code.
Reference: Section 8670.3 and 8670.17.2(a), Government Code.

"851.4 Applicability"

(a) This subchapter shall apply to all tank vessels capable of carrying 5,000 or more long tons of oil in bulk as cargo when these vessels are underway on waters in the San Francisco, San Pablo and Suisun Bays, as follows:

(1) tank vessels carrying 5,000 or more long tons of oil as cargo shall be required to comply with all the requirements in this subchapter;

(2) tank vessels carrying less than 5,000 long tons of oil as cargo shall only be required to comply with the reporting requirement as stated in Subsection 851.7

(b) The escort requirements of this subchapter shall not apply to tank vessels that are only shifting location within an anchorage. Any tug used during such a shifting maneuver need not be an escort tug registered with the Clearing House.

(c) This subchapter shall not apply to tank vessels otherwise covered by the requirements of this subchapter in the event of an emergency. The master of the tank vessel shall report to the Clearing House any deviation from the requirements outlined in this subchapter as soon as practicable, and in no case later than the departure of the tank vessel from the marine waters of the state. For purposes of this section, an emergency shall include, but not be limited to, any of the following:

(1) imminent and immediate danger to the vessel, its cargo, or its crew; or

(2) imminent and immediate danger to a marine terminal, or to the escort tug; or

(3) imminent and immediate danger to a vessel in close proximity to the tank vessel; or

(4) any emergency declared by the Captain of the Port.

(d) This subchapter (except for this Subsection 851.4(d)) shall not apply to tankers with double hulls, as that term is defined in 33 CFR 157.03(kk), when the tanker also has the following:

(1) Fully redundant steering and propulsion systems to include:

(A) two independent propulsion systems each with a dedicated propeller, engine

(or motor), electrical generation system, electrical system (including the switchboard), fuel system, lube oil system, and any other system required to provide the vessel with independent means of propulsion; and

(B) two independent rudders each with separate steering systems; and

(C) the propulsion and steering components, as described in Subsection (A) and (B) above, shall be arranged in separate spaces, such that a fire or flood in one space will not affect the equivalent system in the other space(s); and

(D) a bow thruster with an assigned power source;

(2) A Navigation System in compliance with the federal navigational equipment requirements set forth in 33 CFR Sections 164.35, 164.37, 164.38(b), 164.40, 164.41, 164.42, and 164.43.

(3) No exemption to this subchapter shall be allowed for a tanker requesting a U.S. Coast Guard Captain of the Port letter of deviation, pursuant to 33 CFR Sections 164.51, 164.53, and 164.55.

(4) The Administrator may require tankers that are exempt from this subchapter under the conditions outlined in Subsection (d) to periodically demonstrate the tanker and crew's ability to maneuver in response to a partial or total loss of propulsion and/or steering at a level of safety at least equal to that of an escorted tanker.

(e) This subchapter shall apply to all tugs being used to escort tank vessels in waters identified as escort zones.

(f) The tank vessel master remains responsible for the safe navigation and maneuvering of the vessel in all circumstances. The requirements outlined in this section are in addition to, and not a limitation of, any other responsibility created by custom, law, or regulation.

Note: Authority: Sections 8670.17.2(a) and 8670.23.1(d), Government Code.
Reference: Section 8670.23.1(e)(1), Government Code, and 33 USC 2002(b) and 2007, and 33 CFR 157.03(kk).

"851.5 Escort Zone Requirements"

(a) Six tank vessel escort zones are established as follows:

(1) Zone 1: All waters in the area encompassed by a straight line drawn between Point Bonita Light, through Mile Rocks Light to the shore (the COLREGS Demarcation Line), and eastward to the Golden Gate Bridge;

(2) Zone 2: All waters from the Golden Gate Bridge, south to a line drawn between the southern tip of Bay Farm Island and the southeastern tip of Point San Bruno Peninsula, and north to a line drawn from Point San Pablo to San Pablo Bay Light 4 (Light List number 5880), to San Pablo Bay Channel Light 5 (Light List number 5885), to Point San Pedro;

(3) Zone 3: All waters from the southern end of Zone 2 to one mile north of the San Mateo Bridge;

(4) Zone 4: All waters in the navigable channel from one mile north of and to one mile south of the San Mateo Bridge;

(5) Zone 5: All waters from the eastern boundary of Zone 2 to the western approaches of the Carquinez Bridges at Light 15;

(6) Zone 6: All waters from Light 15, through the Carquinez Strait, north on the Sacramento Ship Channel to one mile beyond the Ryer Island Ferry Terminal and east on the San Joaquin River to one mile beyond the Antioch Bridge;

(b) Tank vessels required to have escorts under this subchapter shall be escorted in the zones as specified below:

(1) Escort tugs are required for tank vessels operating within Zones 1, 2, 4, or 6;

(2) Escort tugs will not be required in Zones 3 or 5, or in areas outside of Zones 1 through 6;

(3) No tank vessel may transit in a zone that requires an escort tug unless escorted by a tug or tugs of sufficient size and capability, as specified in sections 851.9 (for tankers) and 851.9.1 (for barges).

(4) In Zone 1, escort tugs shall be stationed as follows:

(A) on an inbound transit, the escort tug shall be in Zone 1 prior to the tank vessel's arrival to the area bounded by an arc eight nautical miles seaward of and centered on Mile Rocks Light; and

(B) on an outbound transit, the escort tug shall remain in Zone 1 until the tank vessel leaves the area bounded by an arc eight nautical miles seaward of and centered on Mile Rocks Light.

Note: Authority: Sections 8670.17.2(a) and 8670.23.1(d), Government Code.
Reference: Section 8670.17.2(a), Government Code

"851.5.1 Escort Plans"

(a) All tank vessel masters shall use an Escort Plan for transits through zones 1, 2, 4, or 6. The tank vessel shall not continue or commence a transit through any Escort Zone without an Escort Plan that is complete and adequate. The plan shall document the steps that the tank vessel owner/operator and/or master will take to comply with the requirements of this subchapter. The Escort Plan requirements set forth in this section are only planning standards and may not reflect the exigencies of an actual incident response. However, the Escort Plan must demonstrate that the vessel master is prepared to take the actions necessary to assure a reasonable level of success in providing the protection intended by this subchapter, as stated in section 851.2. The Escort Plan shall include:

(1) the tank vessel's intended route(s);

(2) the intended transit speed(s);

(3) a communication plan, to include the radio frequencies that will be used and any other means of electronic communication;

(4) the following characteristics of the tank vessel:

(A) the location and strength of the bitts and chocks to be used by the escort tugs,

(B) the location of the pushing surfaces on the hull that are strong enough to sustain the forces that can be exerted by the escort tug(s),

(C) the number of crew assigned to escort-related duties,

(D) any pertinent performance characteristics and related limitations of the steering and propulsion system(s);

(5) the escort tugs to be used during the transit as required in section 851.9 (for tankers) or 851.9.1 (for barges);

(6) the response actions that will most likely be implemented in the event of an emergency, taking into account the available bitts and chocks, pushing surfaces, line type, and expected tides and currents.

(b) Escort Plans shall be prepared using one of the following:

(1) a format as designed, completed and submitted by the tank vessel owner/operator; or

(2) a Checklist as recommended by the Harbor Safety Committee of the San Francisco Bay region, and approved by the Administrator. The vessel owner/operator shall

assure that the vessel master completes the Checklist according to the requirements in this subchapter.

(c) Review, approval and use of an Escort Plan designed and submitted by the tank vessel owner/operator:

(1) a tank vessel owner/operator may develop an Escort Plan for a vessel or vessels, and submit that plan to the Administrator for review and approval prior to using the plan for escorted transits;

(2) the Escort Plan developed by the vessel owner/operator shall include all the information required in subsection 851.5.1(a). The requirement for information regarding the tug(s) to be used during the transit may be met by stating the size and braking force capacity of the tug(s) needed for each of the vessels covered by the plan.

(3) each plan shall be either approved, approved with conditions, or denied within 60 days after the Administrator receives the plan. Approval, once given, may be revoked if it is found that the plan submitter is not complying with the requirements of this subchapter;

(A) to be approved, the plan must comply with the requirements in this section, must match tug(s) to the tank vessels in accordance with the requirements in this subchapter, and must demonstrate that the tank vessel owner/operator and/or master maintains a level of readiness that will allow for effective implementation of the plan. The plan submitter shall be notified in writing when a plan has been approved.

(B) approval shall be denied or revoked if the plan, or the implementation of the plan, does not comply with the requirements of this subchapter. If a plan is denied or revoked, the Administrator shall notify the owner/operator in writing of the reasons for denial or revocation, and provide an explanation of those actions necessary to secure approval. The Checklist form of escort plan, as prescribed in this section, shall be used unless and until a new or revised escort plan is submitted and approved by the Administrator.

(4) once approved, the master and pilot shall use and comply with the Escort Plan on each escorted transit:

(A) the details of the Escort Plan shall be reviewed and discussed as part of the pre-escort conference (section 851.7);

(B) as part of the pre-escort communications, the pilot or, if there is no pilot on board, the master shall notify the Clearing House that the plan has been reviewed, and shall inform the Clearing House of the tugs that have been

chosen for the escort.

(5) the Checklist format, as described in this section, shall be used for all escorted transits unless or until an Escort Plan is submitted by the vessel owner/operator, and approved by the Administrator.

(d) Completion, review and use of Escort Plans prepared using the Checklist format developed by the Harbor Safety Committee:

(2) the Checklist shall include all the items enumerated in subsection 851.5.1(a), as well as a schematic drawing of a tank vessel sufficient to illustrate the location of the bitts and chocks, and those areas on the hull that are capable of withstanding the forces exerted by the escort tug(s). The Administrator shall provide a copy of the approved Checklist to the Clearing House for distribution to tank vessel owner/operators, masters and/or pilots.

(3) the master shall complete the Checklist, and shall verify that all the requisite elements have been included. The master shall sign the Checklist to indicate that, to the best of the master's knowledge, the information on the Checklist is correct, and is in compliance with the requirements of this subchapter. If there is no pilot on board, the master shall notify the Clearing House when the Checklist has been completed and shall inform the Clearing House of the tugs that have been chosen for the escort. The Administrator may request a copy of any Checklist at any time to determine if the planning process has been completed adequately.

(4) the Checklist shall be completed by the tank vessel master at the following points during a transit operation;

(A) for vessels arriving from sea, the Checklist shall be completed prior to entering Zone 1;

1. Alternatively, the agent or owner/operator may complete the Checklist and electronically send the completed form to the master and the Clearing House:

a. before the vessel’s estimated time of arrival to the San Francisco Bay Pilotage area, or

b. before the vessel’s arrival at the San Francisco Bay Precautionary Area, or

c. after the vessel’s departure from its last Port of Call.

(B) for in-bay movements or for departures, the Checklist shall be completed prior to beginning the transit.

(4) if a pilot is on board, the pilot shall review the Checklist as cited in subsection 851.5.1(d) and shall verify that all the elements have been completed adequately. The pilot shall sign the Checklist after reviewing and verifying its adequacy. The pilot shall then notify the Clearing House that the planning process has been completed, and shall inform the Clearing House of the tugs that have been chosen for the escort.

(A) the pilot shall determine that the Checklist is adequate if the following are met:

1. all the items on the Checklist have been addressed completely; and

2. the information provided demonstrates that the tank vessel master is prepared to take the actions necessary to assure a reasonable level of success in using the escort tug(s) in response to a vessel casualty.

(B) if the pilot determines that the Checklist is not adequate, the pilot shall notify the Clearing House, and explain the reason(s) for such determination. The Clearing House shall then immediately notify the Administrator that a Checklist has been determined to be inadequate by the pilot.

(C) The Administrator shall review all inadequacy determinations made by a pilot and shall decide whether the determination is appropriate. The Administrator may affirm or overturn such determination, or may provide for conditional approval of a Checklist, as follows;

1. the Checklist will be considered adequate if it is complete, if the tug to tanker match has been done in accordance with this subchapter, and the information provided demonstrates that the tank vessel master is prepared to take the actions necessary to assure a reasonable level of success in using the escort tug(s) in response to a vessel casualty. If a Checklist is determined to be inadequate, the vessel may be ordered to discontinue operations until an adequate Checklist is completed;

2. a Checklist may be approved conditionally if there is a minor deficiency in one or more of the requisite elements. Conditional approval may require that the tank vessel operate under specified precautionary measures (such as operating at a slower speed). If the owner/operator of a tank vessel fails to comply with the requirements of the conditional approval, the Administrator may order the tank vessel to discontinue operations until an acceptable Checklist for that vessel has been completed and approved.

(D) The pilot is not responsible for delaying or stopping the transit solely because of a plan's inadequacy.

(5) The tank vessel owner/operator or the master shall ensure a copy of the completed, signed Checklist is submitted to the Clearing House within 14 days after the transit covered by the Checklist. The master, pilot, ship's agent or vessel owner/operator may send the copy to the Clearing House. A copy of the Checklist shall also be maintained aboard the vessel for a period of one year after the transit. A copy of the Checklist shall be made available to the Administrator upon request.

Note: Authority: Sections 8670.17.2(a) & 8670.23.1(d), Government Code.
Reference: Sections 8670.17.2(b) and 8670.23.1(e)(1), Government Code

"851.6 Clearing House Responsibilities."

(a) The Administrator shall establish a Clearing House which shall be responsible for performing escort compliance and monitoring duties, to include the following:

(1) monitor, verify, and record the braking force of each escort tug that will be used to comply with this subchapter;

(2) ensure that the braking force measurement is certified by the American Bureau of Shipping (ABS) or by any member in the International Association of Classification Societies;

(A) the braking force measurement shall be monitored by the Clearing House for those escort tugs that are tested in the San Francisco Bay region;

(B) escort tugs may be tested in another port if the braking force measurement is conducted in a manner consistent with the ABS (or equivalent) standards as used by the Clearing House. The tug owner/operator shall register such measurement with the Clearing House, and shall provide verification that the measurement complies with the ABS (or equivalent) standards.

(3) maintain and publish a register which lists the following for each escort tug whose braking force is measured under this section:

(A) the tug's name;

(B) the tug operator;

(C) the length of the tug;

(D) for tractor tugs, bollard pull ahead or astern, or the braking force determined by an alternate compliance model developed in accordance with the requirements of this subchapter;

(E) for conventional tugs, bollard pull astern;

(F) type and configuration of the propulsion system;

(G) type and configuration of the steering system;

(4) receive notification of a tank vessel's arrival and/or movement as required under section 851.7;

(5) receive notification of the displacement of a tanker, and the tug(s) chosen for an escorted transit. The Clearing House shall use this reported information to determine if the tanker is correctly matched to the escort tug(s) as required in this subchapter, and shall immediately report to the Administrator when such a match has not been done correctly. The verification shall be made prior to the tanker's arrival and/or movement. The Clearing House shall also be responsible for verifying the tug vessel's stability when these tugs are operating westward of the Golden Gate Bridge as specified in Section 851.8(f);

(6) receive notification of the deadweight tonnage of a barge and the tug(s) that have been chosen for the escorted transit. The Clearing House shall use this reported information to determine if the barge is correctly matched to the escort tug(s) as required in this subchapter, and shall immediately report to the Administrator if the match has not been done correctly. The verification shall be made prior to the arrival and/or movement of the barge;

(7) maintain copies of blank Checklists for distribution upon request to tank vessel owner/operators, masters and/or pilots. Pilots shall have blank Checklists available when boarding the tank vessel;

(8) receive notification of the completion of an Escort Plan, or the completion and adequacy of a Checklist, and report to the Administrator when a pilot makes a determination that a Checklist is not adequate;

(9) maintain copies of the completed Checklists submitted by the tank vessel owner/operators or masters. Copies must be kept for a period of 3 years from the date of the transit covered by the Checklist. A copy of any Checklist shall be made available to the Administrator upon request;

(10) maintain the list of training programs approved by the Administrator and provide a copy of that list upon request to any interested party;

(11) receive reports from tug owners, operators or agents of any tug casualty that occurs during an escorted transit, and develop and maintain a database of all such casualty reports;

(12) monitor compliance with the requirements of this subchapter and report all violations to both the Office of Spill Prevention and Response and the Harbor Safety Committee for the San Francisco Bay Region.

(b) The Administrator shall ensure that the duties of the Clearing House are performed in an effective and impartial manner. The Administrator may enter into a contract or establish a memorandum of understanding to designate an individual, organization, corporation or agency to operate as the Clearing House.

(c) The Clearing House shall be authorized to assess and collect a fee to cover the costs incurred in complying with the tug escort requirements of this subchapter. The owner/operators of all escort tugs and all tank vessels required to have a tug escort shall pay the fee assessed by the Clearing House.

Note: Authority: Sections 8670.17.1, 8670.17.2(a) and 8670.23.1(d), Government Code.
Reference: Section 8670.17.1 and 8670.23.1(e)(1), Government Code

"851.7 Communication and Reporting Requirements Before, During and After an Escorted Transit"

(a) No more than one hour prior to entering or transiting the marine waters of the San Francisco, San Pablo or Suisun Bays, the pilot or, if there is no pilot onboard, the master of a tank vessel shall report the vessel's name and position to the Clearing House, and shall report the status of the vessel as follows:

(1) tank vessels carrying 5,000 or more long tons of oil as cargo shall report as "*Escort Required*"; or

(2) tank vessels carrying less than 5,000 long tons of oil as cargo and requiring no escort need not be reported.

(b) After completing the review of the Checklist or the Escort Plan, as specified in section 851.5.1, the pilot or, if there is no pilot onboard, the master of the tank vessel shall report the following to the Clearing House:

(1) a statement that the Escort Planning process has been completed;

(2) if a pilot is onboard, a statement from the pilot as to whether the Checklist is completed, and whether the Checklist is or is not adequate;

(3) a listing of the tugs that were chosen for the escort during the Escort Planning process;

(4) for a tanker, the vessel's displacement;

(5) for a barge, the vessel's deadweight tonnage.

(c) Pre-Escort Conference: Before commencing an escorted transit, the pilot or, if there is no pilot onboard, the master of the tank vessel shall initiate communications with the escort tug(s). During this pre-escort conference, all parties shall plan and discuss the details of the escorted transit as specified on the Checklist or in the Escort Plan, including, but not limited to, the following:

(1) the intended route;

(2) the intended destination;

(3) the speed of the vessel;

(4) the positioning of the escort tug(s) relative to the tank vessel being escorted;

(5) the manner in which an emergency connection would be made between the escort tug and tank vessel;

(6) radio communications, including primary and secondary frequencies; and

(7) anticipated weather and tidal conditions.

(d) The master of the escort tug(s) shall report the name of the tug(s) and the name of the tank vessel to the Clearing House upon arrival at the following locations:

(1) for inbound tank vessel movements; when passing Alcatraz, and when on-station;

(2) for in-bay and outbound tank vessel movements; when on-station at the tank vessel prior to movement of the tank vessel.

(e) At all times during the escorted transit, the master or pilot of the tank vessel shall maintain direct, two-way radio communication with the master or pilot of the escort tug. The radio communication shall be on a channel agreed to by both the master or pilot of the tank vessel and the master or pilot of the escort tug.

(f) Reporting tug casualties during and after an escorted transit:

(1) the master of the escort tug shall immediately notify the master or pilot of the escorted vessel of any casualty that occurs to the tug during the escorted transit. A casualty shall include any loss of main propulsion, primary steering, or any component or system that reduces the maneuverability of the tug, or any other occurrence that adversely affects the tug's ability to perform the escort function;

(2) the tug owner, operator or agent shall file a written casualty report with the Clearing

House within 72 hours of occurrence. The Clearing House shall maintain a database of these reports for three years.

Note: Authority: Sections 8670.17.2(a) & 8670.23.1(d), Government Code.
Reference: Section 8670.23.1(e)(1), Government Code.

"851.8 Requirements for Escort Tugs; Braking Force Measurement, Crew and Training Standards, Equipment and Stationing Criteria."

(a) Braking force measurement:

(1) any escort tug used to comply with the requirements of this subchapter must have its braking force verified and registered with the Clearing House, as follows;

(A) for tractor tugs escorting in an ahead position the braking force is measured as the ahead bollard pull;

(B) for tractor tugs escorting in an astern position the braking force is measured as the astern bollard pull;

(C) for conventional tugs the braking force is measured as the astern bollard pull.

(2) the braking force of each escort tug must be re-measured at least once every 3 years from the date of the initial measurement, or sooner if the operating capability or braking force of the tug has been degraded by 10% or more. The new measurements must be verified and registered with the Clearing House.

(3) The Clearing House shall publish procedures and standards to be followed when conducting braking force measurement. These procedures, entitled “San Francisco Bay Region Clearing House, Rules for Bollard Pull Tests”, dated May 19, 2000, are incorporated by reference. These procedures and standards shall be made available upon request to the Clearing House.

(b) Any escort tug used to comply with the requirements of this subchapter, must meet crew standards as follows:

(1) An escort tug shall have a minimum of four persons on board including one certified tug master and two certified deck hands. The fourth person shall be a crew member capable of resolving mechanical difficulties aboard an escort tug in the event of an emergency;

(2) The requirement for four crew members does not preclude additional deck hands who are gaining experience for certification;

(3) The certified deck hands required under this subsection shall at all times be awake, alert and ready to respond during an escorted transit. The fourth person must be immediately available to respond to any mechanical difficulties aboard the escort tug. Immediate response may be assured by an alarm or other signaling device to wake or alert the fourth person to the emergency.

(A) The Administrator may review the equipment and crew on an escort tug to assure compliance with this provision. The Administrator may require that the fourth person be awake and alert and ready to respond if the tug operator does not provide adequate mechanism to assure that the fourth person is immediately available to respond to a mechanical difficulty.

(4) Working hours for escort crew members shall be limited to 15 hours in any 24-hour period, not to exceed 36 hours during any 72-hour period except in an emergency or a drill. Working hours shall include any administrative duties associated with the tug whether performed on board the tug or on shore.

(c) Training requirements for the crew of any escort tug used to comply with the requirements of this subchapter are as follows:

(1) to qualify for certification as the master or deck hand on an escort tug, an applicant must do all of the following;

(A) possess a current and valid U.S. Coast Guard Merchant Mariner's Document;

(B) show proof of at least 960 hours on duty of prior service aboard a tug, at least 240 hours of which must have been in the San Francisco Bay region;

(C) successfully complete an approved education program which covers the following topics;

1. basic tugboat seamanship;

2. line handling skills;

3. communication systems;

4. emergency response to the loss of steering or propulsion on an escorted tank vessel and on the escort tug itself.

(2) in addition to the requirements of subsection 851.8(c)(1), certification as the master of an escort tug requires that the applicant also do the following:

(A) possess a U.S. Coast Guard license appropriate to the escort tug in service; and

(B) show proof of an additional 240 hours on duty of service aboard a tug in the San Francisco Bay region (for a total of 480 of the requisite 960 hours of service); and

(C) successfully complete an approved education program which covers knowledge of local waters, basic seamanship, and the use of the escort tug in reducing the risk of an escorted vessel's grounding or collision.

(3) individuals may be considered to have satisfied certain educational requirements without attending an education program, if they meet the following criteria:

(A) an individual with a U.S. Coast Guard rating of Able Seaman Special (OSV) is considered to have met the educational requirements in subsection 851.8(c)(1)(C) 1 and 2;

(B) an individual with any Coast Guard license appropriate for the escort tug in service is considered to have met the educational requirements in subsections 851.8(c)(1)(C).

(4) the Administrator shall review and approve the educational programs for masters and deck hands of escort tugs, and shall establish and maintain a list of all such approved programs:

(A) an educational program shall be approved if it provides the coursework required by this section, and can adequately train students in the requisite skills;

(B) a request for approval of a program shall be submitted to the Administrator in writing and shall include the following:

1. a description of the course content and materials;

2. the qualifications of the instructors;

3. the estimated cost of the program to the students;

4. a description of the site(s) where the course will be held, both classroom and field locations.

(C) the Administrator shall notify the applicant of approval or denial within 30 days of the submittal of the application;

1. if the educational program is denied, the applicant will be notified of the reasons for denial and may resubmit the program for review after

the deficiencies have been remedied;

2. once approved, the educational program must be submitted for re-evaluation at least once every 5 years or when a significant change occurs in the course content or materials. The 5-year re-submittal shall include an updated description of course content, materials, cost, and instructor qualifications, as well as copies of student evaluations from classes conducted during the previous year;

3. the Administrator may audit the course at any time to assure compliance with the requirements of this section.

(5) The Administrator shall assure compliance with tug crew training and qualification requirements. Compliance with crew training and qualification requirements shall be verified as follows:

(A) tug owner/operators shall establish and maintain adequate documentation to verify the training and qualifications of individual crew members, and shall make this information available to the Administrator upon request;

(B) the Administrator may review the owner/operator's documentation annually to assure compliance with this section;

(C) the Administrator may request this documentation at any time.

(d) The following equipment must be onboard an escort tug and in operable condition during all escorted transits;

(1) a line-throwing gun for use in Zone 1, with 300 feet of tag line. The tag line shall be of suitable strength and size for deploying the tow line;

(2) power line-handling equipment fore or aft for rapid, mechanically assisted deployment of lines. The primary line-handling equipment shall be in the position (fore or aft) best suited for the design of the particular tug in escort service;

(3) tow line with a breaking strength that is 2.5 times the certified braking force of the escort tug;

(4) a quick release device to be used when an escort tug is in a tethered mode;

(5) one working radar;

(6) fendering appropriate to absorb impact in skin-to-skin operations, and located at both the bow and stern to act as pivot points when pulling away from the tank vessel. In addition, the fendering must be sufficient to assure that there are no

exposed corners, large holes or metal parts which could inflict damage on the escorted vessel, and must cover sufficient surface area to minimize sliding when working at an angle to the tank vessel.

(e) Annual inspection of the escort tug's equipment:

(1) the owner/operator shall assure that the required equipment is on board and operable during all escorted transits;

(2) the Administrator shall verify that the required equipment is on board each escort tug, and in operable condition. This verification may be obtained by an annual inspection which may be announced or unannounced. In conducting such inspections, the Administrator shall be guided by the standards established by the American Waterways Operators (AWO) in their Responsible Carrier Program, Sections III and IV, dated 2/21/95.

(f) Stability requirements for all escort tugs that operate westward of the Golden Gate Bridge are as follows:

(1) an escort tug shall have a load-line certificate; or

(2) an escort tug shall have a letter verifying stability issued by the American Bureau of Shipping or any member in the International Association of Classification Societies. The letter shall establish that the escort tug complies with the stability requirements outlined in federal Load Line Regulations at 46 CFR, Sections 42.09-10(a), 42.09-15(a), (b), and (c) except subparagraphs (1) and (2), and 42.09-25 (a) and (b) except for the portion of the last line of (b) that reads "...and meeting applicable requirements in this subchapter"; and 46 CFR Sections 173.090, 173.095 and 174.145. A copy of this letter shall be kept on file with the Clearing House.

(g) Stationing requirements for escort tugs:

(1) an escort tug shall not simultaneously engage in the escort of more than one tank vessel;

(2) escort tugs shall maintain a station-keeping distance of no more than 1000 feet ahead or aside, or 500 feet astern of the tank vessel while engaged in escort activity;

(3) escort tugs shall standby as the tank vessel transits Zones 3 and/or 5, as follows:

(A) the escort tug(s) shall standby in Zone 2 or 6 as the tank vessel transits Zone 5; and

(B) the escort tug(s) shall standby in Zone 2 or 4 as the tank vessel transits Zone 3; or

(C) the escort tug(s) may accompany the escorted tank vessel through Zone 3 and/or 5 in lieu of standing by.

(4) in Zone 1, the escort tug(s) shall be stationed as follows:

(A) on an inbound transit, the escort tug shall be in Zone 1 prior to the tank vessel's arrival to the area bounded by an arc eight nautical miles seaward of and centered on Mile Rocks Light; and

(B) on an outbound transit, the escort tug shall remain in Zone 1 until the tank vessel leaves the area bounded by an arc eight nautical miles seaward of and centered on Mile Rocks Light.

(h) Escort transit log:

(1) escort tug masters shall keep a record in the ship's log of every escorted transit;

(2) the record of the escorted transit in the ship's log shall include information regarding the sequence of events during the transit, the crew assignments, any casualties that may occur, and any drills conducted.

Note: Authority: Sections 8670.17.2(a) & 8670.23.1(d), Government Code.
Reference: Section 8670.23.1(e)(1), Government Code, and 46 CFR Sections 173.090, 173.095 and 174.145.

"851.9 Tanker and Tug Matching Criteria, and Tanker Crew and Equipment Requirements"

(a) Default Matrix Option for Matching Tugs to Tankers: The tug or tugs used for an escorted transit shall be able to provide sufficient braking force to stop the escorted tanker from a speed of 5 knots through the water. The braking force of the tug(s) shall match the tanker's displacement, as indicated in the following matrix:

	Zones 1 and 2					Zones 4 and 6				
Assisting Current	slack	1 kt	2 kts	3 kts	4 kts	slack	1 kt	2 kts	3 kts	4 kts
Displacement*	Braking Force in kips (1,000 pounds of force)									
0 to < 20	20	20	30	40	40	40	50	70	90	110
20 to < 30	20	30	40	50	60	50	70	90	120	160
30 to < 40	30	40	50	60	70	60	90	120	160	210
40 to < 50	30	40	60	70	90	70	110	150	200	250

50 to < 60	40	60	70	90	110	100	140	190	250	320
60 to < 80	50	70	90	120	140	120	180	250	330	420
80 to < 100	60	80	110	140	180	150	220	300	400	520
100 to < 120	70	100	130	170	210	180	270	370	500	650
120 to < 140	80	110	150	190	240	210	310	430	580	760
140 to < 160	90	140	190	240	310	240	350	490	660	860
160 to < 180	100	150	210	270	350	260	390	550	740	970
180 to < 200	110	170	230	300	390	**	**	**	**	**
200 to < 220	120	180	250	330	420	**	**	**	**	**

* 1,000 long tons

** The channel depths in zones 4 and 6 limit vessels that may use the channel to those drawing less than 35 feet. This table does not address vessels in zones 4 and 6 with a displacement greater than 180,000 long tons because such vessels would draw more than 35 feet and would thus not be allowed into these zones.

(1) Applicable current velocity: The current velocities shall be determined using the published tide and current tables developed and maintained by NOAA, and used by the pilots. The current velocity used shall be the one published for the estimated time of arrival at the points noted below. The estimated time of arrival shall include a window of 30 minutes before and after the scheduled arrival to account for possible delays or changes. Tank vessel operators are responsible for adjusting the estimated arrival time when it appears that it will fall outside of the originally estimated one hour window.

(2) Location of current readings: The specific current velocity to be used in conjunction with the matrix shall be the published readings for the following locations:

(A) The Golden Gate Bridge - the predicted current velocity at the Golden Gate Bridge shall apply to vessels in zones 1 and 2 that are west of a north-south line drawn through the eastern tip of Alcatraz Island and terminating at Angel Island or to vessels in zones 1 and 2 that are west of the eastern entrance to Racoon Strait.

(B) The Bay Bridge; west of Yerba Buena Island - the predicted current velocity at the Bay Bridge shall apply to vessels in zone 2 that are south of an arc drawn from Alcatraz Island east to Treasure Island and east of the north-south line drawn through Alcatraz Island.

(C) 1.25 miles north of Point Chauncey - The predicted current velocity at 1.25 miles north of Pt. Chauncey shall apply to vessels in zone 2 that are north of

an arc with a radius of 2.7 nautical miles centered at the intersection of the Bay Bridge and the San Francisco Peninsula drawn from Alcatraz Island east to Treasure Island and east of the north-south line drawn through the eastern tip of Alcatraz Island.

(D) The San Mateo Bridge The predicted current velocity at the San Mateo Bridge shall apply to vessels while in zone 4.

(E) The Carquinez Bridge - the predicted current velocity in Carquinez Strait shall apply to vessels in zone 6.

How to use the Default Matrix Option for Matching Tugs to Tankers: The matrix provides current velocities for slack water, 1, 2, 3, and 4 knots. The slack water column shall be used only when the water is truly slack. The 1 knot column shall be used for any velocity above 0 and equal to 1. The 2 knot column shall be used for any velocity above 1 and equal to 2, and so on up to the 4 knot maximum.

In those situations where the current velocity is above 4 knots, such as may occur at the Golden Gate, the tank vessel requiring an escort tug shall reschedule the transit to a time when the current velocity drops to 4 knots or below.

(b) Alternative To The Default Matrix for Matching Tugs to Tankers: Measurement methodologies other than those used to establish the Default Matrix may be used instead of, or in addition to, the Matrix as follows;

(1) Alternate Compliance Model for Escort Tugs: Tug owner/operators may propose an alternate method for measuring the braking force of any tug (in kips). Such alternate method may be used to demonstrate that the tug can provide higher steering or braking forces (in kips) than the simple bollard pull measurement would indicate. An alternate measurement may only be submitted once in any 12 month period and shall comply with the following:

(A) the owner/operator shall assure that the following are included when developing a methodology for calculating an alternate braking force for a given escort tug:

1. the alternate measurement is conducted from a starting speed of 10 knots for zones 1 and 2, and 8 knots for zones 4 and 6;

2. the escort tug is not required to exceed the limits of its ability to generate the forces, and in no instance submerges the deck edge to achieve the alternate measurement;

3. the escort tug operates all its equipment at or below the manufacturer's recommended guidelines for the safe working load of the tug;

4. unless demonstrated otherwise by full scale testing, all machinery shall be assumed to operate at or below performance levels published by the manufacturer;

5. any current bollard pull values registered with the Clearing House shall be utilized where appropriate in any formulas or models;

6. any known condition that would impair the escort tug's ability to perform shall be included in the calculation.

(B) the measurement must be conducted by a marine architect or engineer approved by the Administrator;

1. the tug owner/operator shall submit the name of the marine architect or engineer to the Administrator for approval prior to having that individual or his/her company conduct an alternate measurement.

2. the Administrator shall approve a marine architect or engineer if that person has demonstrated the education, knowledge and experience necessary to conduct the testing and modeling of tug capabilities and braking force.

(C) the alternate model and the resultant measurements shall be approved by the Administrator before the alternate model may be used to match a tanker to a tug or tugs. The Administrator shall approve the alternate model if it provides both of the following:

1. a higher force (in kips) than the simple bollard pull measurement would indicate; and

2. at least the same level of protection as the braking forces established in the default matrix.

(D) after an alternate model is approved, the Administrator shall provide the Clearing House with the new braking force measurements for the subject tug(s). The new measurements shall be used with the Default Matrix established in this section.

(2) Alternate Compliance Model for Tankers: Tanker owner/operators may develop a model for the vessels in their fleet relative to the steering and braking demands of the vessels, and the braking capabilities of tugs. The steering and braking demands established by the alternate model may be used instead of the Default Matrix to match escort tugs to the tankers. An alternate compliance model may only be submitted once in any 12-month period and shall comply with the following:

(A) the measurement must be conducted by a marine architect or engineer approved by the Administrator. The tanker owner/operator shall submit the name of the marine architect or engineer to the Administrator for approval prior to having that individual or his/her company conduct an alternate model;

1. the Administrator shall approve a marine architect or engineer if that person has demonstrated the education, knowledge and experience necessary to conduct the testing and modeling of tug capabilities and braking force.

(B) the alternate model and the resultant measurements shall be approved by the Administrator before the alternate model may be used to match a tanker to a tug or tugs. The Administrator shall approve the alternate model if the following conditions are met:

1. under the alternate model the tanker can complete a safe transit, staying within the 95th percentile of constraint as established in "The San Francisco Bay Tanker Escort Study", dated 7/95, prepared by Glosten Associates; and

2. the alternate model provides at least the same level of protection as the braking forces established in the Default Matrix, and can be achieved using no more than three tugs as required in subsection 851.9(d).

(C) After an alternate model is approved, the Administrator shall provide the Clearing House with the tanker demand in kips which corresponds to the tanker's displacement and speed under the approved alternate model.

(c) The Administrator may allow deviations from compliance for the matching of tugs to laden tankers when these vessels make short transits from berth to berth within a zone and are assisted by docking tugs and transiting at speeds less than 8 knots.

(1) The tanker master or owner/operator shall make a request for such deviations to the Administrator through the Clearing House at least 24 hours prior to the desired shift.

(2) The Administrator shall approve or deny the deviation request by verbally notifying the Clearing House within 12 hours of the request. A written confirmation shall follow within 24 hours.

(d) Maximum number of tugs to be used during an escorted transit:

(1) the tanker must be accompanied by a sufficient number, but no more than three tugs to provide the braking forces specified in this section;

(e) Speed limits for tankers are as follows:

(1) tankers that use the Default Matrix as provided in this section, shall not proceed at a speed in excess of 10 knots through the water in Zones 1, 2, 3 and 5, nor more than 8 knots through the water in Zones 4 and 6, with the following qualifications:

(A) the speed or speeds selected by the tanker for the transit must permit stationing the escort tug(s) to allow the tug(s) to effectively influence the tanker's movement in the event of a casualty;

(B) the tanker shall proceed at a safe speed. The determination of a safe speed shall include, but not be limited to;

1. environmental factors such as the depth of the water, visibility, wind conditions, and the speed of the tidal currents; and

2. proximity of other vessel traffic and any other vessels at anchor.

(C) Tankers shall in any case have their engines ready for immediate maneuver and shall not operate in any control modes or with fuels that prevent an immediate response to an engine order.

(2) tank vessels may be exempt from the speed limits specified in subsection 851.9(e)(1) if they establish and use an approved alternate compliance model for determining the steering and braking demands of their vessels, as provided in this section. In such cases, the speed limit will be that used to establish the alternate compliance model, and must be specified in the Escort Plan, or on the Checklist.

(f) Crew requirements:

(1) a tanker shall have sufficient and qualified line-handling-capable crew members standing by and available to immediately receive lines from each escort tug. These crew shall be stationed proximate to the lines, and shall not be assigned duties that would interfere with their ability to immediately respond to an emergency situation;

(2) the tanker shall comply with all applicable federal regulations relating to anchor readiness;

(3) tankers shall have sufficient and qualified supervisors to provide direct supervision of line-handling crew operations. Supervisors shall have direct radio communication capability with the bridge of the tanker.

(g) Equipment requirements:

(1) each tanker shall have deck chocks and bitts that are of sufficient size, strength, and number to accommodate the anticipated braking force of the escort tug(s);

(2) the tanker owner/operator shall indicate the location and strength of the bitts and chocks in the Escort Plan for each vessel.

Note: Authority: Sections 8670.17.2(a) & 8670.23.1(d), Government Code.
Reference: Section 8670.23.1(e)(1), Government Code

"851.9.1 Barge and Tug Matching Criteria, and Barge Crew and Equipment Requirements"

(a) A barge must be accompanied by a sufficient number, but no more than three tugs to provide the braking force specified in this section;

(1) the line-haul tug which provides the power to push or tow a barge shall not become an escort tug during the course of a transit unless the line-haul tug has been relieved of its duties as the primary towing vessel, and replaced with another tug that serves as primary towing vessel.

(2) any line-haul tug that does become the escort tug after being relieved of all line-haul duties, must meet all the requirements for escort tugs as specified in this subchapter.

(b) The tug or tugs used to escort a barge must be able to provide sufficient braking force to stop the barge, measured as follows:

(1) the braking force shall be measured as the escort tug's astern static bollard pull;

(2) the escort tug shall have total astern static bollard pull in pounds equal to, not less than, the barge's deadweight tonnage;

(c) A barge shall not exceed 8 knots through the water during an escorted transit.

(d) Crew Requirements:

(1) A barge shall have sufficient and qualified line-handling-capable deck hands onboard the barge, standing by and available to receive lines from each escort tug;

(A) the deck hands for the barge shall be made available from the line-haul tug;

(B) in the interest of crew safety, when entering or leaving Zone 2 bound to or from the sea (Golden Gate Bridge), crew transfers to or from the barge may be made in the vicinity of Alcatraz Island;

(C) when a barge is fitted with an emergency tow wire, or comparable mechanical device of sufficient strength and handling characteristics to control the barge, or the escort tug is made fast to the barge, deck hands shall not be required on board the barge.

(2) Barges shall have sufficient and qualified supervisors to provide direct supervision of line-handling crew operations. Supervisors shall have direct radio communication capability with the bridge of the tug that is towing the barge.

(e) Equipment requirements:

(1) each barge shall have deck chocks and bitts that are of sufficient size, strength and number to accommodate the anticipated braking force of the escort tug(s);

(2) the barge owner/operator shall indicate the location and strength of the bitts and chocks in the Escort Plan for each vessel or on the Checklist for each transit.

Note: Authority: Sections 8670.17.2(a) & 8670.23.1(d), Government Code.
Reference: Section 8670.23.1(e)(1), Government Code

"851.10 Penalties

Any person who knowingly, intentionally or negligently violates any provision of this subchapter shall be subject to criminal, civil, and/or administrative civil actions as prescribed in Article 9, Government Code, beginning with Section 8670.57.

Note: Authority: Sections 8670.17.2(a) & 8670.23.1(d), Government Code.
Reference: Sections 8670.23.1(e)(1) & Article 9, Sections 8670.57 through 8670.69.6, Government Code.

"851.10.1 Requests for Redetermination"

The owner/operator of a tank vessel or an escort tug may request redetermination of an action taken relative to an inadequacy decision or conditional approval of an Escort Plan or Checklist, denial or revocation of approval of an educational program, or application for use of an alternative compliance model. A request for redetermination must be submitted in writing and shall be processed as follows:

(a) the request must be submitted to the Administrator within 15 calendar days from the date of the decision being disputed;

(b) the request must contain the basis for the redetermination and, if available, provide evidence which rebuts the basis for the decision;

(c) within 15 calendar days following the receipt of the request for redetermination, a notice shall be sent indicating that the Administrator shall adhere to the earlier decision or that the decision has been modified or rescinded.

Note: Authority: Sections 8670.17.2(a) and 8670.23.1(d), Government Code.
Reference: Sections 8670.23.1(e)(1) and Article 9, Sections 8670.57 through 8670.69.6, Government Code.